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US Environmental Protection Agency,
Docket ID No.EPA-HQ-OW-2007-1126,
EPA Docket Center (EPA/DC),
Water Docket, MC 2822T,
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Task Force:

I am submitting the following comments on the draft 2008 Mississippi River Basin & Gulf of Mexico Hypoxia Action Plan. They are offered from my perspective as a scientist who was engaged in the early stages of work on Gulf hypoxia, a participant in several subsequent reviews and conferences on the subject, and as a participant in and student of the process of applying science to ameliorate hypoxia and other forms of eutrophication in coastal waters including the Chesapeake Bay and Baltic Sea. The following comments draw heavily on the recently completed Advisory of EPA's Science Advisory Board's (SAB) Hypoxia Advisory Panel:

1. The Coastal Goal should not be diluted by adding "we strive to" and "or make significant progress towards reducing." First, to strive is not a goal; one strives toward a goal. Second, the second insertion is in effect a retreat from the 5,000 square kilometer hypoxia reduction goal. The Task Force notes that it made this change on the advice of the SAB that: "it is even more important to proceed in a directionally correct fashion." A full reading of this section of the SAB Advisory makes clear its reaffirmation of the 5,000 square kilometer target and, after noting that the 2007 hypoxic zone was the third largest since measurements began, its recommendation that actions be taken to manage the factors affecting hypoxia rather than waiting for greater precision in goal setting. It is not accurate to interpret this to mean that it is sufficient just to make "significant progress" in lieu of achieving the 5,000 square kilometer goal by 2015.

2. Quantitative targets for nutrient load reduction should be included in the 2008 Action Plan. The SAB Advisory specifically recommended a dual nutrient strategy targeting at least a 45% reduction in the riverine flux of both nitrogen and phosphorus. Every other major program to reduce nutrient over-enrichment in the United States and Europe has such nutrient load reduction targets. These can be adjusted over time to reflect environmental requirements and technical and economic feasibility, as has been the case in the Chesapeake Bay Program, but

without such quantitative targets it is impossible to determine and allocate the load reductions required from the sources and regions within the river basin.

3. The Action Plan should include an accelerated schedule for completion and implementation of comprehensive nutrient reduction strategies for the states and for federal programs. Now seven years into the Action Plan, no strategies have yet been developed and it can be read from the draft language that strategies for states with the most significant contributions of nutrients the Gulf might not be completed until 2013, six years from now and only two years from the 2015 target date. Strategies could be completed and implementation begun within a year or two at the most and should be based on allocations of the nutrient reductions by tributary and state that are required to achieve both reductions of loads to the Gulf and in-basin water quality standards. These allocations should be determined through a science-based, collaborative process that considers the nutrient loads delivered and opportunities for nutrient source reduction or removal. Again, such an allocation process, through the Tributary Strategies of the Chesapeake Bay Program for example, has been undertaken in virtually every national and international effort to alleviate waterborne pollution.

4. Actions should be undertaken to direct existing as well as new resources to achieve reduction of nutrient pollution to the maximum degree possible. The Action Plan repeatedly qualifies its commitments by including statements such as "subject to the availability of additional resources." Yet watersheds with the highest rates of nutrient runoff tend to have less land enrolled in conservation programs than watersheds with lower agricultural losses (M.S. Booth and C. Campbell. 2007. *Environmental Science and Technology* 41:5410-5418). The SAB Advisory observed that targeting, competitive bidding mechanisms, extending conservation compliance mechanisms to nutrient management and restructuring eligibility requirements for existing conservation expenditures would cost-effectively improve the environmental benefits of these programs.

5. A specific action should be included in the 2008 Action Plan to ensure that any increased nutrient loads that result from expanded agricultural production for the refining of ethanol and other biofuels are fully mitigated. The SAB Advisory found that rapidly expanding grain-based ethanol will result in increased nitrogen and phosphorus losses to water: annual nitrogen losses may increase by 118 million kg. This is largely the result of Federal governmental policies and expenditures and has greatly increased profitability of agriculture in the basin. If the Task Force is to achieve Action Plan goals it should propose steps to avoid backsliding by limiting and offsetting such increases in nutrient loading.

6. Completion dates should be specified for each action item included in the Action Plan. This was done for the short-term actions listed in the 2001 Action Plan, but with very few exceptions are absent in the draft 2008 Action Plan. Without an appropriate time frame, actions are unlikely to be taken and there is no accountability.

Thank you for this opportunity to comment on the draft 2008 Action Plan. I would be please to clarify or expand on any of the comments offered here and to provide documentation in support of them.

Sincerely yours,

Donald F. Boesch